

MODELS

Low Voltage Modular PDU Model, 100 – 127 VAC

24A Model – mPDU, 24A, Low
252663-D71 (NA/LA/JPN)

High Voltage Modular PDU Model(s), 200 – 240 VAC

16A Model – mPDU, 16A, High
252663-B24 (WW)

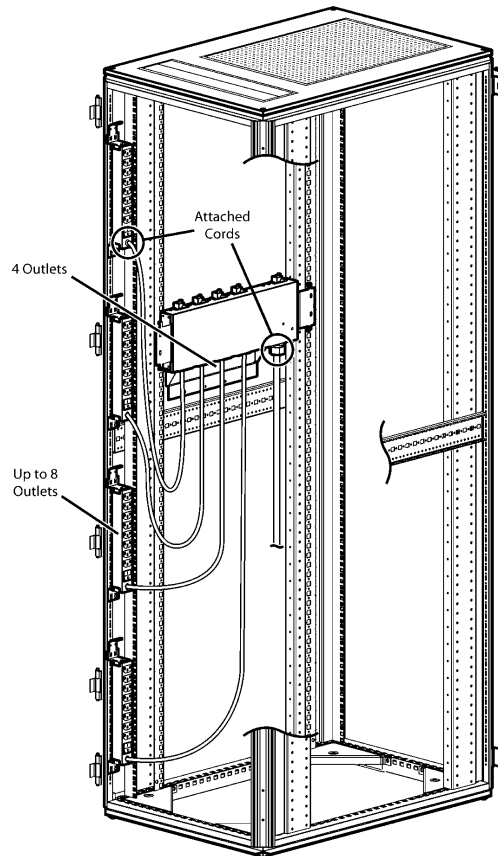
24A Model – mPDU, 24A, High
252663-D72 (NA/LA/JPN)

32A Model – mPDU, 32A, High
252663-B31 (INT'L)

40A Model – mPDU, 40A, High
252663-B21 (WW)

Feature List

- Single input power distribution units with a unique modular design architecture
- Up to 32 outlet receptacles
- Zero-U/1U dense rack form factor
- Easily accessible outlet receptacles and improved cable management
- Models range from 16A-40A



OVERVIEW

Modular PDUs have a unique modular architecture designed specifically for the dense data center customers who want to maximize their power distribution and space efficiencies in the rack. This new modular design consists of two main building blocks, the Control Unit and the Extension Bar(s). Available in 16A-40A current ratings, each unit comes with one Control Unit and up to four Extension Bars, offering up to 32 outlet receptacles (the 16A model has two Extension Bars, and offers 16 outlets). Providing easy accessibility and reduced cable clutter, the Modular PDUs offer you the flexibility to easily mount your units in several different locations within the rack, without having to sacrifice valuable rack U-space.

KEY FEATURES

- Unique modular design architecture
- Small form factor with flexible mounting options
- Up to 32 outlet receptacles
- Easy installation
- Consolidate and maximize cord management
- Easily accessible outlets
- Current ratings from 16A to 40A

PRODUCT HIGHLIGHTS

Unique Modular Design Architecture

Modular PDUs have a unique modular design architecture. This "Building block" concept consists of two main parts, the Control Unit, and the Extension Bar(s). The 24-40A mPDUs ship with one Control Unit and 4 Extension Bars. Each Control Unit is a single-phase unit that branches out into 4 single-phase branch circuits. The Extension Bars can be plugged into the Control Unit, and can be mounted directly to the rack frame, spanning the entire length of the rack.

Note: The new 16A Modular PDU model ships with one Control Unit (with 2 branch circuits) and two Extension Bars. This is the only model in the Modular PDU family that has a detachable input power cord, allowing for increased flexibility, ease of use, and adaptability for country specific requirements. The 24A and 32AmPDU models come with an attached input power cord, due to regulatory requirements for higher amperage devices. And the 40A model has to be field wired. Higher amperage mPDUs offer more outlets, allow more equipment to be connected, and are especially suited to the high-density server deployments.

Small Form Factor and Flexible Mounting Options

The Control Unit is zero-U or 1U rack mountable. And the Extension Bars mount directly to the rack-frame or the rack extension unit. With each Modular PDU, you can get up to 32 outlet receptacles (except for the 16A and 40A models) in zero-U of rack space. And if you plan to mount two Modular PDUs in one rack (typical configuration), you could get up to 64 output receptacles, without having to use any rack U-space.

Up to 32 Outlet Receptacles

Modular PDUs offer up to 32 outlet receptacles. Meaning, customers can plug-in as many as 32 power cords into one Modular PDU set. And if they were to mount two such PDU sets, they have a total of 64 outlets! That means the Modular PDUs can support anywhere from a couple of servers in a rack to up to 42 1U servers (IMPORTANT: Provided the total current load does not exceed the maximum allowable current draw of the PDU. To calculate server current draw, please refer the Proliant Power calculator on ActiveAnswers System Configurator tool).

Note: The 16A model has 16 outlets and the 40A model has 28 outlets, while the other models have 32 outlets.

Easy Installation

The installation process is quick and easy. Whether you choose to mount the Modular PDU in zero-U or 1U, all required mounting brackets, accessories, and installation instructions are shipped with the product. The Extension Bars come with easy to use, snap-in brackets, which fit directly into the rack frame of a HP 9000 and 10000 Series racks.

Note: Modular PDUs may be installed in most third-party racks in a 1U configuration (no zero-U mounting). To mount the Extension Bars in a rack other than the HP 9000 and 10000 series racks, an optional kit PN 310777-B21 is offered. This kit allows mounting the Extension Bars in most third party racks that use a standard EIA19" vertical rail.

PRODUCT HIGHLIGHTS *(continued)*

Consolidate and Maximize Cord Management

When you have the power to choose where to mount the Extension Bars, you have the option of mounting the bars closer to where your specific servers are located; so you don't have to use long power cords running down the entire length of your rack – you can now get smaller cords plugging-in to a nearby Extension Bar.

Shorter jumper cords (4.5ft) are offered as optional kits (PN 142257-006, quantity 1; PN 142257-007, quantity 15). Two short jumper cords ship with every high voltage model of the mPDU. Additional shorter cords, if needed, have to be ordered (typically most devices ship with a 12ft – 8ft long jumper cord). For more information on IEC320 -C14 to IEC 320 -C13 jumper cords, please refer the PDU cable section at the end of this document.

For low voltage applications (100 – 127V), typically most devices ship with a NEMA 5-15 cable (which plugs-into the NEMA 5-15R outlets on the low volt Extension Bar). However, some devices with IEC320-C13 inlet may not ship with a NEMA cable. In such cases, a cable IEC320-C14 to NEMA 5-15P (PN e7743a) will have to be ordered.

Easily Accessible Outlet Receptacles

Because you have the flexibility to decide how you want to configure your Modular PDU, you can now choose to mount the Extension Bars such that the outlet receptacles are easily accessible, allowing you to easily plug-in and plug-out devices.

Current Ratings from 16A to 40A

Modular PDUs are available in a wide range, including four high volt models ranging from 16A to 40A current ratings; and one low voltage 24A model.

Compatibility

Ideal for use with the HP 9000 and 10000 Series Racks, the Modular PDUs are largely designed for the dense rack environment. These Modular PDUs connect directly to the facility input power.

In addition, the low voltage model also connects to the low voltage UPS R3000 XR. The 40A model may be hardwired to a UPS as well. And the recently announced 16A high voltage model will also connect to the high voltage UPS models of the R3000 XR and R6000.

Note: Control unit of the Modular PDUs may be mounted in a 1U configuration in most standard racks. To mount the Extension Bars in a rack other than the HP 9000 and 10000 series racks, an optional kit PN 310777-B21 is offered. This kit allows mounting the Extension Bars in most third party racks which use a standard EIA19" vertical rail.

SERVICE & SUPPORT, CAREPAQ AND WARRANTY INFORMATION

Warranty Upgrade Options

HP Modular PDUs are backed by a limited 3-year warranty.

When used in the HP 9000 and 10000 Series Racks, HP PDUs assume the warranty of the HP Rack in which they're installed. HP CarePaq services bought for the HP Rack also extend towards the HP Modular PDU if it is being used inside the HP rack.

FM-CBXHW-36 – 9x5 Next-Business-Day On-Site Coverage, 3 Years

FM-CB4HR-36 – 9x5 4-Hour Response On-Site Coverage, 3 Years

FM-CB724-36 – 24x7, 4-Hour Response On-Site Coverage, 3 Years

CarePaq Information

For CarePaq (hardware & software) information, as well as orderable part numbers, please refer to the URL listed below:

<http://www.compaq.com/services/carepaq/index.html>

HP MODULAR PDU SPECIFICATIONS

Mechanical Dimensions (WxHxD)	17.5 x 1.62 x 5.6 in/44.45 x 4.11 x 14.22 cm
Unit Weight	18 lb/8.16 kg
Shipping Dimensions (WxHxD)	21.5 x 12.25 x 13.0 in/54.61 x 31.12 x 33.02 cm
Shipping Weight	20.2 lb/9.16 kg
Operating Temperature	50° to 122°F/10° to 50°C
Operating Relative Humidity (%)	10% to 90%
Operating Elevation	0 to 10,000 ft/0 to 3048 m
Storage Temperature	-4° to 140°F/-20° to 60°C
Storage Relative Humidity (%)	5% to 95%
Storage Elevation	0 to 30,000 ft/0 to 9144 m
Conformance Standards	UL, CUL, CE, NOM, D - 16A and 40A models UL, CUL, NOM - 24A High and Low voltage models CE, D - 32A model

Kit Contents	24-40A Modular PDUs ship with x1 Control Unit and x4 Extension Bars 16A Modular PDU ship with x1 Control Unit and x2 Extension Bars All models ship with: <ul style="list-style-type: none">0U/1U Mounting brackets/hardware for Control UnitMounting brackets for Extension BarsCord Retention bracket for the Control UnitTie wrapsInstall Card High voltage models ship with two 10A, IEC320 -C14 to IEC 320 -C13 jumper cables, each 4.5ft/1.37m long. In addition, the 16A model ships with one 16A, IEC 320-C19 to IEC 320-C20 jumper cord, 8.2ft/2.5m long.
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ADDITIONAL SPECIFICATIONS

	Low Voltage 24A (NA/JPN/LA)	High Voltage 16A (WW)	High Voltage 24A (NA/JPN/LA)	High Voltage 32A (INTL)	High Voltage 40A (WW)
Part Number	252663-D71	252663-B24	252663-D72	252663-B31	252663-B21
Current (max)	24A	16A	24A	32A	40A
AC Voltage Range	100-127V	200-240V	200-240V	200-240V	200-240V
Frequency (Hertz)	50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz
Load Capacity (VA)	2880 (@120V)	3680 (@230V)	4992 (@208V)	7360 (@230V)	9200 (@230V)
Output Circuit Breakers	4x15A	2X10A	4x15A	4x15A	4x15A
Overload Protection	Yes	Yes	Yes	Yes	Yes
Indicator Lights	Indicator light on each of the Extension Bars; and a main AC pilot light on the Control Unit				
Plugs and Cables					
Control Unit (x1)	<i>Input:</i> 3.6m attached cable with L5-30P <i>Output:</i> Four IEC320-C19 (12A ea)	<i>Input:</i> Detachable input power cord (country specific) with a IEC 320-C20 inlet <i>Output:</i> Two IEC320-C19 (8A ea)	<i>Input:</i> 3.6m attached cable with L6-30P <i>Output:</i> Four IEC320-C19 (12A ea)	<i>Input:</i> 3.6m attached cable with IEC309-32A <i>Output:</i> Four IEC320-C19 (12A ea)	<i>Input:</i> Hardwire <i>Output:</i> Four IEC320-C19 (12A ea)
<p>Note: Manual ON/Off control provided for each load group; switch guards provided to prevent inadvertent power Off. The Control unit for the 16A model has 2 outputs while the Control Unit for all other Modular PDUs has 4 outputs. The Extension Bars plug directly into the output-ends of the Control Unit.</p>					
Extension Bars (x4)* *Except for the 16A model, which has 2 Extension Bars	<i>Input:</i> 2m attached cord with IEC320-C20 <i>Output:</i> Each Bar has 8 NEMA 5-15 outlets (12A max per outlet, 12A max per Bar)	<i>Input:</i> 2m attached cord with IEC320- C20 <i>Output:</i> Each Bar has 8 C13 outlets (10A max per outlet, 12A max per Bar)	<i>Input:</i> 2m attached cord with IEC320- C20 <i>Output:</i> Each Bar has 8 C13 outlets (10A max per outlet, 12A max per Bar)	<i>Input:</i> 2m attached cord with IEC320- C20 <i>Output:</i> Each Bar has 8 C13 outlets (10A max per outlet, 12A max per Bar)	<i>Input:</i> 2m attached cord with IEC320- C20 <i>Output:</i> 3 Bars each with 8 C13 (10A max per outlet, 12A max per Bar); 1 Bar with 4 C19 (12A max per outlet, 12A max per Bar)

MODULAR PDU FAMILY INFORMATION

MODEL SELECTION MATRIX

	Low Voltage 24A	High Voltage 16A	High Voltage 24A	High Voltage 32A	High Voltage 40A
Part Number	252663-D71	252663-B24	252663-D72	252663-B31	252663-B21
Input Connection (Single Input)	NEMA L5-30P	Detachable input power cord with a IEC 320-C20 inlet Note: The 16A model with the detachable cord can be used only in applications where the total leakage current is less than 3.5 mA.	NEMA L6-30P	IEC 309-32A	Field Wired Terminal
Output Connections	(32) NEMA 5-15R Note: The low volt Extension Bars w/5-15 outlets should be used ONLY with the low volt Control Unit that is shipped with the low volt Modular PDU unit.	(16) IEC 320 C-13 Note: The 16A model ships with 2 Extension Bars, while all other 24-40A models ship with 4 Extension Bars.	(32) IEC 320 C-13	(32) IEC 320 C-13	(24) IEC 320 C-13 (4) IEC 320 C-19
Applications	Connects to low voltage models of the UPS R3000 XR (and may also be connected directly into the facility input)	Connects to the high voltage models of the UPS R3000 XR and R6000 Note: Except for the UPS R3000 XR, North America high volt model, where an additional cable option kit, PN 340653-001 (IEC320-C19 to L6-20P), is needed to connect a 16A mPDU to the NA high voltage model of the UPS R3000 XR Also connects directly into the facility input Note: You need to purchase a cable PN 340653-001 (IEC320-C19 to L6-20P) for North America. Other country specific cables are managed at the country level.	Designed to connect directly into the facility input	Designed to connect directly into the facility input	May be hardwired (Note: Hardwiring needs to be done by a certified on-site electrician in accordance with the local electrical installation codes.) into the facility input or to a high voltage UPS (R12000 XR)

ADDITIONAL PDU CABLES AVAILABLE

Product Part Number		Description
142257-002	8 ft/2.5 m, x1	10A, IEC320 -C14 to IEC 320 -C13 cables for connecting devices to the power distribution unit.
142257-003	10 ft/3.0 m, x1	
142257-006	4.5 ft/1.37 m, x1	
142257-007	4.5 ft/1.37 m, x15	
201493-001	High Volt, Y-cable for NA/LA, x1	Remote Insight Lights-Out Edition (RILOE) power Y-cable has been designed for plugging into HP PDUs. One single Y-cable supports two RILOE cards, which reduces the number of plugs required on the PDU for connecting the RILOE cards.
201493-002	High Volt, Y-cables for NA/LA, x20	
201493-B21	High Volt, Y-cable for INTL, x1	
201493-B22	High Volt, Y-cables for INTL, x20	
Please refer to the Power Cord Matrix for more information on power cords/cable part numbers, input/output descriptions. http://ftp.compaq.com/pub/products/servers/proliantstorage/power-protection/powercordmatrix.pdf		

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